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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,013	03/02/2004	Yutaka Takahashi	33082M0871	3575

441 7590 05/04/2005

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EXAMINER

KORNAKOV, MICHAIL

ART UNIT PAPER NUMBER

1746

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/790,013

Applicant(s)

TAKAHASHI

Examiner

Michael Kornakov

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 03/02/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 20 and 22 are objected to because of the following informalities: The recited in claim 20 clause "said treatment vessel is heated and kept **as** said predetermined temperature" apparently should recite ---said treatment vessel is heated and kept **at** said predetermined temperature---. The indicated in claim 22 "Sic" apparently should recite ---SiC---.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 18, 21, 22 are rejected under 35 U.S.C. 102(b) as being anticipated by JP08-209350.

JP'350 teaches a cleaning method for CVD treatment apparatus, having a treatment vessel, the said method comprising preheating the ClF_3 cleaning gas outside the treatment vessel up to 220°C and feeding the preheated cleaning gas into the treatment vessel, while the treatment vessel is heated and kept at a predetermined temperature. The treatment vessel is made from quartz and the film, removed from the treatment vessel in the teaching of JP'350 is the same kind as a film, formed on a surface of the object to be processed in the treatment vessel (Abstract; 0006, 0009, 0011, 0014, 0015, 0026, 0037, 0038, 0040, 0042, 0068, 0071). With regard to the recitation of claim 18, stating that the cleaning gas is preheated up to an activation capability temperature of ClF_3 , JP'350 recites the same cleaning gas preheating

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temperature as instantly claimed and therefore the above mentioned recitation of the instant claim 18 is met by JP'350. It is axiomatic that one who performs the steps of a process must necessarily produce all of its advantages. Mere recitation of a newly discovered property or **function**

that is inherently possessed by the things or steps in the prior art does not cause a claim drawn to those things to distinguish over the prior art, consult *Leinoff v. Louis Milona & Sons, Inc.* 220 USPQ 845 (CAFC 1984).

Therefore, all the limitations of the instant claims are explicitly or inherently met by JP'350.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 08-209350.

JP'350 remains silent about having an object holding tool inside the vessel during the vessel cleaning. However, one skilled in the art would have found obvious to place the object holding tool inside the treatment vessel for simultaneous cleaning the treatment vessel and the holding tool in order to enhance cleaning efficiency of the processing equipment by eliminating the time required for separate cleaning the object holding tool for subsequent processing.

7. Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niino in view of JP07-335563 and as evidenced by Sandhu et al (U.S. 6,201,219).

Niino teaches a cleaning method for CVD treatment apparatus, having a treatment vessel, the said method comprising preheating the ClF_3 cleaning gas outside the treatment vessel and feeding the preheated cleaning gas into the treatment vessel,

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while the treatment vessel is heated and kept at a predetermined temperature. The treatment vessel is made from quartz and the film, removed from the treatment vessel in the teaching of Niino is the same kind as a film, formed on a surface of the object to be processed in the treatment vessel (Abstract; col.5, lines 23-31; col. 8, lines 6-9; paragraph, bridging col.8 and 9; col.14, lines 4-8). The teaching of Niino remains silent about the preheating temperature being in the range of 300°C to 1000°C.

JP'563 teaches cleaning a reaction container with NF_3 and indicates that activating the cleaning gas by its heating to about 600°C and/or decomposition before the introduction into the reaction container beneficially affects the cleaning process (Abstract, 0003, 0007, 0015, 0016, 0017).

Sandhu teaches that NF_3 and ClF_3 are equally used for thermal chamber cleaning, thus recognizing the equivalency between NF_3 and ClF_3 for the same purpose (col.6, lines 43-45). In the instant case substitution of equivalents requires no express motivation, as long as the prior art recognizes equivalency, *In re Fount* 213 USPQ 532 (CCPA 1982); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *Graver Tank & Mfg. Co. Inc. V. Linde Air products Co.* 85 USPQ 328 (USSC 1950).

Therefore, one skilled in the art, motivated by the teaching of JP'563 would have found obvious to preheat ClF_3 cleaning gas up to a heat decomposition temperature, particularly to 600°C, as advised by JP'563, before introducing it into the treatment vessel in order to enhance effectiveness of the cleaning process in the teaching of Niino with the reasonable expectation of success.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kornakov whose telephone number is (571) 272-1303. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael Kornakov
Primary Examiner
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04/30/2005